

AIWI  
Revision 13  
Cessna  
525  
525A  
525B  
December 10, 2004

This data sheet which is part of Type Certificate No. A1WI prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of Title 14 of the Code of Federal Regulations.

**1 - Model 525, (Normal Category), Approved October 15, 1992**

Airspeed limitations		
Vmo (maximum operating)		
Sea level to 30,500 ft.		263 KIAS (260 KCAS)
Mmo above 30,500 ft.		0.71 M <sub>I</sub> (0.70 Mach calibrated)
Va (maneuvering sea level)		
10,400 lb. (525-0001 through 525-0359)		183 KIAS (182 KIAS)
10,600 lb. (525-0360 and On)		185 KIAS (184 KIAS)
<i>See AFM for variations with weight and altitude.</i>		
Vb (speed for max. gust intensity)		217 KIAS (215 KCAS)
Fe (Flaps extended)		
15 degrees (takeoff & approach)		200 KIAS (198 KCAS)
35 degrees (landing)		161 KIAS (160 KCAS)
60 degrees (ground flaps)		prohibited in flight

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**1 - Model 525, (Normal Category), Approved October 15, 1992, continued**

## Airspeed limitations (cont'd)

V <sub>mca</sub> (Minimum control speed) Air	92 KIAS (91 KCAS)	
V <sub>mcg</sub> (Minimum control speed) Ground		
525-0001 through 525-0359	95 KIAS (93 KCAS)	
525-0360 and On	93 KIAS (93 KCAS)	
V <sub>LO</sub> (landing gear operating)		
	S/N 525-0001 through 525-0457	S/N 525-0458 and on
Extending	186 KIAS (185 KCAS)	186 KIAS (185 KCAS)
Retracting	186 KIAS (185 KCAS)	175 KIAS (174 KCAS)
V <sub>LE</sub> (landing gear extended)	186 KIAS (185 KCAS)	
V <sub>SB</sub> (speed brakes extended)	Any speed with or without flaps	
Maximum autopilot operating speed		
Sea level to 30,500 ft.	263 KIAS (260 KCAS)	
Above 30,500 ft.	0.71 M <sub>I</sub> (0.70 MACH calibrated)	
Maximum tire ground speed	165 knots	

## C.G. Range (Landing Gear Extended) Design C.G. Limits:

Applicable to airplanes S/N 525-0001 through 525-0359:

Forward Limits: Linear variation from 243.94 in. aft of datum (22.00% MAC) at 10,400 lb. to 242.43 in. aft of datum (19.81% MAC) at 8,800 lb.; Linear variation from 242.43 in. aft of datum (19.81% MAC) at 8,800 lb. to 240.14 in. aft of datum (16.50% MAC) at 7,700 lb.; 240.14 in. aft of datum (16.50% MAC) at 7,700 lb. or less.

Aft Limits: 248.78 in. aft of datum (29.00 % MAC) at 10,400 lb. or less.

Applicable to airplanes S/N 525-0360 and On:

Forward Limits: Linear variation from 244.13 in. aft of datum (22.27% MAC) at 10,600 lb. to 242.43 in. aft of datum (19.81% MAC) at 8,800 lb.; Linear variation from 242.43 in. aft of datum (19.81% MAC) at 8,800 lb. to 240.14 in. aft of datum (16.50% MAC) at 7,700 lb.; 240.14 in. aft of datum (16.50% MAC) at 7,700 lb. or less.

Aft Limits: 248.78 in. aft of datum (29.00 % MAC) at 10,600 lb. or less.

Landing Gear retracting moment (+157.9) in-lb.

Empty Wt. C.G. Range None

MAC 69.078 in. (L.E. of MAC at +228.745 in. aft of datum)

Maximum Weight	S/N 525-0001 through 525-0359	S/N 525-0360 and On
Takeoff	10,400 lb.	10,600 lb.
Landing	9,700 lb.	9,800 lb.
Zero Fuel	8,400 lb.	8,400 lb.
Ramp	10,500 lb.	10,700 lb.

**1 - Model 525, (Normal Category), Approved October 15, 1992, continued**

Minimum Crew for all Flights (see note 5 for cockpit equipment/arrangement restrictions):

One pilot (in the left pilot seat) plus additional equipment as specified in the  
Kinds of Operations Equipment List (KOEL) contained in the Limitations  
Section of the FAA Approved Airplane Flight Manual

OR

One pilot and one copilot

No. of Seats

Maximum eight (two crew plus six passenger seats)

Maximum Baggage

Nose compartment	425 lb. ( + 74.0 in. aft of datum)
Aft cabin	100 lb. ( +265.0 in. aft of datum)
Tailcone	325 lb. ( +350.0 in. aft of datum)

Fuel Capacity (usable)

Total usable fuel 3220 lb. (477 gal). Two wing tanks with 1,610 lbs. (238.5 gal)  
usable each; (see NOTE 1 for unusable)  
+254.05 in. aft of datum

Oil Capacity (usable)

Tank mounted on each engine: 2.0 quarts usable each engine;  
+312.30 in. aft of datum; (see NOTE 1)

Maximum Operating Altitude 41,000 ft.

Control Surface Movements

Elevator	Up	20 +0/-1 degrees
	Down	15 +/-1 degrees
Elevator Trim Tab	Up	12 +/-1 degrees
	Down	20 +/-1 degrees
Rudder	Right	30 +/-1 degrees
	Left	30 +/-1 degrees
Rudder Trim Tab	Right	20 +/-1 degrees
	Left	20 +/-1 degrees
Aileron	Up	23.5 +/-1 degrees
	Down	20.5 +/-1 degrees
Aileron Trim Tab	Up	20 +/-1 degrees
	Down	18 +/-1 degrees
Wing Flap	Up	0 +/-1 degrees
	T.O./Appr.	15 +1/-1 degrees
	Land	35 +/-1 degrees
	Ground	60 +/-1 degrees
Speed Brakes - Upper	Up	0 to 49 +/-2 degrees
Speed Brakes - Lower	Down	0 to 68 +/-2 degrees
Thrust Attenuators	Stow	-6 +/-1 degrees
(Ref to Engine Long. axis)		
Thrust Attenuators	Deploy	54 +/-1 degrees
(Ref to Engine Long. axis)		

See Airplane Maintenance Manual for rigging instructions.

Serial Nos. Eligible

525-0001 and up

Datum

94.0 in. forward of the front face of the forward pressure bulkhead.

**1 - Model 525, (Normal Category), Approved October 15, 1992, continued**

Leveling Means                      Longitudinal - Left hand upper floorboard aft of FS 151.00.  
   Lateral - Left hand and right hand upper floorboard aft of FS 152.00.

**Certification Basis - Model 525:**

- (1) Title 14, Part 23 of the Federal Aviation Regulations effective February 1, 1965, as amended by Amendments 23-1 through 23-38, and 23-40;
- (2) Part 36 of Title 14 of the Code Federal Regulations effective December 1, 1969, as amended by Amendments 36-1 through 36-18;
- (3) Part 34 of Title 14 of the Code of Federal Regulations effective September 10, 1990;
- (4) Compliance with the Noise Control Act of 1972;
- (5) Special Conditions as follows:
  - (a) 23-ACE-55, additional requirements for:  
Smoke evacuation, protection of electronic systems from lightning and high intensity radiated electromagnetic fields (HIRF) and lightning, electronic flight instrument displays, thrust attenuating systems, engine fire extinguishing system, performance, including takeoff, takeoff speeds, accelerate-stop, takeoff path, takeoff distance and takeoff run, takeoff flight path, climb one engine inoperative, landing, balked landing, climb, minimum control speed, trim, static longitudinal stability, demonstration of static longitudinal stability, static directional and lateral stability, wings level stall, turning flight and accelerated stalls, stall warning, vibration and buffeting, high speed characteristics, airspeed indicating system, static pressure system, maximum operating speed limit, minimum flight crew, operating limitations, operating procedures, performance information, airspeed indicator, effects of contamination on Natural Laminar Flow airfoils, definitions, and AFM approved information.
- (6) Exemption as follows:
  - (a) Exemption No. 5759 granted to use a relaxed "Dutch Roll" damping criteria above 18,000 feet in lieu of damping criteria of 14 CFR § 23.181(b).
- (7) Equivalent level of safety as follows (Applicable to airplanes S/N 525-0360 and On equipped with Collins Proline 21 electronic displays of engine instruments):
  - (a) Number ACE-00-01: 14 CFR §§ 23.1305(c)(2), (c)(5), and 23.1549(a) through (d), direct reading, digital only displays for the high-pressure turbine speed ( $N_2$ ), and fuel flow indications.
- (8) Compliance with ice protection has been demonstrated in accordance with 14 CFR §§ 23.1416 and 23.1419.

Application for type certificate dated February 14, 1990. Type Certificate A1WI issued October 15, 1992, obtained by the manufacturer using Delegation Option Authorization Procedures of Part 21 of Title 14 of the Code of Federal Regulations. The Model 525 is defined by Cessna Airplane Assembly Drawing Number 6300000.

**Production Basis:**

Production Certificate No. 4 issued and Delegation Option Authorization No. DOA-230428-CE (CE-3) authorized to issue Airworthiness Certificates under Delegation Option Authorization Procedures of Part 21 of Title 14 of the Code of Federal Regulations.

The Basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane for certification.

**1 - Model 525, (Normal Category), Approved October 15, 1992, continued**

NOTE 1. Current weight and balance information, including list of equipment included in certificated empty weight, and loading instructions are provided for each airplane in the FAA Approved Airplane Flight Manual (AFM) at the time of original certification.

The certificated empty weight and corresponding center of gravity location must include:

Unusable fuel	39.8 lb. at +257.9 in.
Full oil	18.0 lb. at +312.3 in.
Hydraulic Fluid	27.5 lb. at +265.0 in.
Anti-ice Fluid	3.4 lb. at +91.5 in.

NOTE 2. Airplanes must be operated according to the FAA Approved Airplane Flight Manual (AFM), part number 525FM-00 (or later approved revision for serials 0001 through 0359) , 525FMA-00 (or later approved revision for serials 0360 and On). Required placards and markings are listed in Chapter Eleven (11) of Maintenance Manual, part number 525MM00 (or later approved revision for serials 0001 and On).

NOTE 3. See Maintenance Manual, Chapter Four (4), "Airworthiness Limitations" for inspections, mandatory retirement life information, and other requirements for continued airworthiness.

NOTE 4. All replacement seats (crew and passenger), although they may comply with TSO C39, must also be demonstrated to comply with 14 CFR §§23.321, 23.395, 23.561, 23.562, and 23.785.

The foam cushion buildup of all seats (crew and passenger) may not be altered. Any deviations in the foam construction or stiffness must be demonstrated by test to comply with the listed 14 CFR 23 paragraphs.

The RH side facing seat lap belt shall have a buckle which opens from right to left and the LH side facing belted toilet lap belt shall have a buckle which opens from left to right, thereby preventing the buckle's own inertia from causing it to open. Any other configuration must be verified by dynamic test.

NOTE 5. Approval for operation with a minimum crew of one pilot is based upon the cockpit equipment installation and arrangement evaluated during FAA certification testing. No significant changes may be made to the installed cockpit equipment or arrangement (EFIS, autopilot, avionics, etc.), except as permitted by the approved MMEL, without prior approval from the responsible Aircraft Certification Office.

**1 - Model 525, (Normal Category), Approved October 15, 1992, continued**

Note 6: Certain airplane Serial Numbers meet the initial airworthiness requirements for operation in Reduced Vertical Separation Minimum (RVSM) airspace.

S/N 525-0001 through 525-358	Airplanes that have accomplished Cessna Service Bulletin SB525-34-41.
S/N 525-0359	Received factory installation of Dual Ametek AM-250 altimeters.
S/N 525-0360 and On	Airplanes that have received factory installation* of optional Ametek AM-250 copilot's altimeter; or Airplanes that have received factory installation* of optional Collins Pro Line 21 copilot's Air Data Computer and Primary Flight Display; or Airplanes that have accomplished Cessna Service Bulletin SB525-34-40.

\* Equipment installed by the Cessna factory will be identified in the individual airplane equipment list.

Each operator must obtain RVSM operating approval directly from the FAA.

**II - Model 525A, (Normal Category), Approved June 21, 2000**

Engines Two Williams International L.L.C. FJ44-2C turbofans

Fuel Commercial kerosene Jet A, Jet A-1, Jet B, JP-4, JP-5, or JP-8.

Engine Limits Static thrust standard day, sea level

Takeoff 2,400 lb.

Max. permissible engine rotor operating speeds (Takeoff and Maximum Continuous):

N<sub>1</sub> (fan) 105.2% (100% = 17,245 r.p.m.)

N<sub>2</sub> (Gas Gen.) 98.8% (100% = 41,200 r.p.m.)

Max. permissible interturbine gas temperatures:

Takeoff 820 Degrees C

Max. Continuous 805 Degrees C

Transient (starting 15 sec.) 1000 Degrees C

Airspeed limitations

V<sub>mo</sub> (maximum operating)

Sea level to 8,000 ft. 260 KIAS (260 KCAS)

8,000 ft. to 29,300 ft. 275 KIAS

(Varies linearly between 274 KCAS and 272 KCAS)

M<sub>mo</sub> above 29,300 ft. 0.72 M<sub>I</sub> (0.707 Mach calibrated)

V<sub>a</sub> (maneuvering sea level at 12,375 lb.) 197 KIAS (197 KCAS)

*See AFM for variations with weight and altitude.*

**II - Model 525A, (Normal Category), Approved June 21, 2000, continued**

## Airspeed limitations, continued

Vb (speed for max. gust intensity)	217 KIAS (217 KCAS)
Fe (Flaps extended)	
15 degrees (takeoff & approach)	200 KIAS (199 KCAS)
35 degrees (landing)	161 KIAS (160 KCAS)
60 degrees (ground flaps)	prohibited in flight
Maximum speed with flaps failed to 60 degrees (ground flaps) (Emergency Only)	140 KIAS (140 KCAS)
Vmca (Minimum control speed) Air	
0 degrees (takeoff)	89 KIAS (90 KCAS)
15 degrees (takeoff & approach)	81 KIAS (82 KCAS)
Vmcg (Minimum control speed) Ground	89 KIAS (90 KCAS)
V <sub>LO</sub> (landing gear operating)	
Extend	250 KIAS (250 KCAS)
Retract	200 KIAS (199 KCAS)
V <sub>LE</sub> (landing gear extended)	275 KIAS (270 KCAS)
V <sub>SB</sub> (speed brakes extended)	Any speed with or without flaps
Maximum autopilot operating speed	Any normal operating speed
Maximum tire ground speed	165 knots

## C.G. Range (Landing Gear Extended) Design C.G. Limits

Forward Limits: Linear variation from 276.89 in. aft of datum (19.46% MAC) at 12,375 lb. to 273.33 in. aft of datum (14.50% MAC) at 9,200 lb.; 273.33 in. aft of datum (14.50% MAC) at 9,200 lb. to 8,500 lb.; Linear variation from 273.33 in. aft of datum (14.50% MAC) at 8,500 lb. to 277.99 in. aft of datum (21.00% MAC) at 7,500 lb.; 277.99 in. aft of datum (21.00% MAC) at 7,500 lb. or less.

Aft Limits: 283.72 in. aft of datum (29.00% MAC) at 12,375 lb. or less.

Landing Gear retracting moment (+406.9) in-lb.

Empty Wt. C.G. Range None

MAC 71.720 in (L.E. of MAC at +262.926 in. aft of datum)

Maximum Weights	Takeoff	12,375 lb.
	Landing	11,500 lb.
	Zero Fuel	9,300 lb.
	Ramp	12,500 lb.

Minimum Crew for all Flights (see note 5 for cockpit equipment/arrangement restrictions):

One pilot (in the left pilot seat) plus additional equipment as specified in the Kinds of Operations Equipment List (KOEL) contained in the Limitations Section of the FAA Approved Airplane Flight Manual

OR

One pilot and one copilot

No. of Seats Maximum ten (two crew plus eight passenger seats)

**II - Model 525A, (Normal Category), Approved June 21, 2000, continued**

## Maximum Baggage

Nose compartment	400 lb. ( + 74.0 in. aft of datum)
Aft cabin	100 lb. ( +301.7 in. aft of datum)
Tailcone	600 lb. ( +384.60 in. aft of datum)

## Fuel Capacity (usable)

Total usable fuel 3,961 lb. (586.8 gal).  
 Two wing tanks with 1,980.5 lb. (293.4 gal) usable each;  
 +288.70 in. aft of datum (see NOTE 1 for unusable)

## Oil Capacity (usable)

Tank mounted on each engine: 2.3 quarts usable each engine;  
 +364.3 in. aft of datum (see NOTE 1)

Maximum Operating Altitude 45,000 ft.

## Control Surface Movements

Elevator	Up	18.5 +/- 0.5 degrees
	Down	15 +/- 1 degrees
Elevator Trim Tab	Up	9 +/- 1 degrees
	Down	23 +/- 1 degrees
Rudder	Right	35 +/- 1 degrees
	Left	35 +/- 1 degrees
Rudder Trim Tab	Right	20 +/- 1 degrees
	Left	20 +/- 1 degrees
Aileron	Neutral position (TE Up)	2.0 +/- 0.5 degrees
	Up from neutral	23.5 +/- 1 degrees
	Down from neutral	20.5 +/- 1 degrees
Aileron Trim Tab	Up	20 +/- 1 degrees
	Down	18 +/- 1 degrees
Wing Flap	Up	0 +/- 1 degrees
	T.O./Appr.	15 +/- 1 degrees
	Landing	35 +/- 1 degrees
	Ground	60 +/- 2 degrees
Speed Brakes - Upper	Up	0 to 49 +/- 2 degrees
	- Lower Down	0 to 68 +/- 2 degrees
Thrust Attenuators	Stow	-4.5 +/- 0.3 degrees
(Ref. to Engine Long. axis)		
Thrust Attenuators	Deploy	65 +/- 1 degrees
(Ref. to Engine Long. axis)		
See Airplane Maintenance Manual for rigging instructions		

## Serial Nos. Eligible

525A-0001 and up

## Datum

94.0 in. forward of the front face of the forward pressure bulkhead.



**II – Model 525A, (Normal Category), Approved June 21, 2000, continued****Leveling Means**

Lateral – Place 525A Leveling Tool across inboard crew seat rails at approximately FS 148. Ensure Leveling Tool is parallel to fuselage station plane and is resting solidly on seat rails. Position inclinometer on Leveling Tool with base parallel to the long axis of the Leveling Tool.

Longitudinal - Place 525A Leveling Tool across inboard crew seat rails at approximately FS 148. Ensure Leveling Tool is parallel to fuselage station plane and is resting solidly on seat rails. Position inclinometer on Leveling Tool with base perpendicular to the long axis of the Leveling Tool at BL 0.

**Certification Basis - Model 525A:**

- (1) Part 23 of Title 14 of the Code of Federal Regulations effective February 1, 1965, as amended by Amendments 23-1 through 23-40;
  - (a) Additions:

14 CFR §§ 23.331, 23.351, 23.421, 23.423, 23.425, 23.427, 23.939, and 23.1163 as amended by Amendments 23-1 through 23-42;

14 CFR §§ 23.943, 23.951, 23.957, 23.961, 23.967, 23.991, 23.993, 23.997, 23.999, 23.1001, 23.1011, 23.1019, 23.1041, 23.1061, 23.1189, 23.1322, 23.1357, 23.1391, 23.1393, 23.1395, 23.1443, and 23.1445 as amended by Amendments 23-1 through 23-43;

14 CFR §§ 23.179, 23.305, 23.321, 23.361, 23.397, 23.479, 23.485, 23.613, 23.615, 23.621, 23.731 and 23.1549 as amended by Amendments 23-1 through 23-45;

14 CFR §§ 23.335, 23.337, 23.341, 23.343, 23.345, 23.347, 23.371, 23.393, 23.399, 23.415, 23.441, 23.443, 23.455, 23.457, 23.473, 23.499, 23.561, 23.571, 23.572, 23.611, 23.629, 23.673, and 23.725 as amended by Amendments 23-1 through 23-48;

14 CFR §§ 23.677, 23.723, 23.785, 23.787, 23.791, 23.853, 23.855, 23.1303, 23.1307, 23.1321, 23.1351, 23.1353, 23.1361, and 23.1401 as amended by Amendments 23-1 through 23-49;

14 CFR §§ 23.233, 23.235, 23.1555, and 23.1589 as amended by Amendments 23-1 through 23-50;

14 CFR §§ 23.901, 23.903, 23.929, 23.963, 23.965, 23.1013, 23.1043, 23.1143, 23.1183, 23.1191, and 23.1337 as amended by Amendments 23-1 through 23-51;
- (2) 14 CFR Part 36 effective December 1, 1969, Noise Standards, as amended by Amendments 36-1 through 36-22.
- (3) 14 CFR Part 34 effective September 10, 1990, Fuel Venting and Exhaust Emission Requirements for Turbine Engine Powered Airplanes, as amended by Amendments 34-1 through 34-3.

**II - Model 525A, (Normal Category), Approved June 21, 2000, continued****Certification Basis - Model 525A, continued:**

- (4) Special Conditions as follows:
  - (a) 23-ACE-55, additional requirements for:  
Smoke evacuation, protection of electronic systems from lightning and high intensity radiated electromagnetic fields (HIRF) and lightning, electronic flight instrument displays, thrust attenuating systems, engine fire extinguishing system, performance, including takeoff, takeoff speeds, accelerate-stop, takeoff path, takeoff distance and takeoff run, takeoff flight path, climb one engine inoperative, landing, balked landing, climb, minimum control speed, trim, static longitudinal stability, demonstration of static longitudinal stability, static directional and lateral stability, wings level stall, turning flight and accelerated stalls, stall warning, vibration and buffeting, high speed characteristics, airspeed indicating system, static pressure system, maximum operating speed limit, minimum flight crew, operating limitations, operating procedures, performance information, airspeed indicator, effects of contamination on Natural Laminar Flow airfoils, definitions, and AFM approved information.
  - (b) 23-102-SC, High Altitude Operation (45,000 feet). Additional requirements for Ventilation, Air conditioning, Pressurized cabins, Oxygen equipment and supply, Supplemental oxygen, Oxygen distribution and equipment. (See NOTE 6.)
- (5) Exemption: Exemption number 5759 granted to use a relaxed “Dutch Roll” damping criteria above 18,000 feet in lieu of damping criteria of 14 CFR § 23.181(b).
- (6) Equivalent level of safety as follows:
  - (a) Number ACE-00-01: 14 CFR §§ 23.1305(c)(2), (c)(5), and 23.1549(a) through (d), direct reading, digital only displays for the high-pressure turbine speed (N<sub>2</sub>), and fuel flow indications.
  - (b) Number ACE-99-07: 14 CFR § 23.841(b)(6), Cabin Pressurization – High Altitude Takeoff and Landing Operations.
  - (c) Number ACE-00-05; 14 CFR § 23.841(a), to allow small temporary cabin altitude excursions above 15,000 feet in the event of any probable pressurization system failure.”
- (7) Compliance with ice protection has been demonstrated in accordance with 14 CFR §§ 23.1416 and 23.1419.

Application to amend type certificate dated May 14, 1998. Type Certificate A1WI amended June 21, 2000, obtained by the manufacturer using Delegation Option Authorization Procedures of Part 21 of Title 14 of the Code of Federal Regulations. The Model 525A is defined by Cessna Airplane Assembly Drawing Number 6300001.

**Production Basis:**

Production Certificate No. 4 issued and Delegation Option Authorization No. DOA-230428-CE (CE-3) authorized to issue Airworthiness Certificates under Delegation Option Authorization Procedures of Part 21 of Title 14 of the Code of Federal Regulations.

The Basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane for certification.

**II - Model 525A, (Normal Category), Approved June 21, 2000, continued**

- NOTE 1. Current weight and balance information, including list of equipment included in certificated empty weight, and loading instructions are provided for each airplane in the FAA Approved Airplane Flight Manual (AFM) at the time of original certification.

The certificated empty weight and corresponding center of gravity location must include:

Unusable fuel	76.7 lb. at +297.20 in.
Full oil	13.9 lb. at +364.3 in.
Hydraulic Fluid	18.9 lb. at +278.0 in.
Anti-ice Fluid	3.4 lb. at +91.5 in.

- NOTE 2. Airplanes must be operated according to the FAA Approved Airplane Flight Manual (AFM), part number 525AFM04 (or later approved revision). Required placards and markings are listed in Chapter Eleven (11) of Maintenance Manual, part number 525 AMM05 (or later approved revision).

- NOTE 3. See Maintenance Manual Chapter Four (4), "Airworthiness Limitations" for mandatory component retirement life information.

- NOTE 4. All replacement seats (crew and passenger), although they may comply with TSO C39, must also be demonstrated to comply with 14 CFR §§ 23.321, 23.395, 23.561, 23.562, and 23.785.

The foam cushion buildup of all seats (crew and passenger) may not be altered. Any deviations in the foam construction or stiffness must be demonstrated by test to comply with the listed 14 CFR 23 paragraphs.

The RH side facing seat lap belt shall have a buckle which opens from right to left and the LH side facing belted toilet lap belt shall have a buckle which opens from left to right, thereby preventing the buckle's own inertia from causing it to open. Any other configuration must be verified by dynamic test.

- NOTE 5. Approval for operation with a minimum crew of one pilot is based upon the cockpit equipment installation and arrangement evaluated during FAA certification testing. No significant changes may be made to the installed cockpit equipment or arrangement (EFIS, autopilot, avionics, etc.), except as permitted by the approved MMEL, without prior concurrence from the responsible Aircraft Certification Office.

- NOTE 6. Model 525A airplanes have been approved for high altitude operations (altitudes above 41,000 feet), by Special Conditions. Any modifications to the pressure vessel must be approved in accordance with the requirements as shown in the certification basis. This includes modifications which could result in a pressure vessel opening, either through crack-growth or antenna loss, greater than 3.00 sq. in.

- NOTE 7. Certain airplane Serial Numbers meet the initial airworthiness requirements for operation in Reduced Vertical Separation Minimum (RVSM) airspace.

S/N 525A-0001 and On	Airplanes that have received factory installation * of optional Ametek AM-250 copilot's altimeter or; Airplanes that have received factory installation * of optional Collins Pro Line 21 copilot's Air Data Computer and Primary Flight Display; or Airplanes that have accomplished Cessna Service Bulletin SB525A-34-01.
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\*Equipment installed by the Cessna factory will be identified in the individual airplane equipment list.

Each operator must obtain RVSM operating approval directly from the FAA.

**III - Model 525B, (Commuter Category), Approved October 15, 2004**

Engines Two Williams International, L.L.C. FJ44-3A turbofans  
The engine's FADEC software is Version Number CP219.08.04

Fuel Commercial kerosene Jet A, Jet A-1, JP-5, or JP-8.

Engine Limits Static thrust standard day, sea level

Takeoff	2,780 lb.
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Max. permissible engine rotor operating speeds (Takeoff and Maximum Continuous):

N <sub>1</sub> (fan)	102.78%	(100% = 18,000 r.p.m.)
N <sub>2</sub> (Gas Gen.)	100.00%	(100% = 41,200 r.p.m.)

Max. permissible interturbine gas temperatures:

Takeoff	877 Degrees C (5 min, 10 min OEI)
Max. continuous	840 Degrees C
Transient (starting 15 sec.)	1000 Degrees C

Airspeed limitations

V <sub>mo</sub> (maximum operating)	
Sea level to 8,000 ft.	260 KIAS (257 KCAS)
8,000 ft. to 29,300 ft.	278 KIAS (275 KCAS)
M <sub>mo</sub> above 29,300 ft.	0.737 M <sub>I</sub> (0.72 MACH calibrated)
V <sub>a</sub> (maneuvering sea level at 13,870 lb.)	207 KIAS (205 KCAS)
<i>See AFM for variations with weight and altitude.</i>	
V <sub>b</sub> (speed for max. gust intensity)	230 KIAS (227 KCAS)
Fe (Flaps extended)	
15 degrees (takeoff & approach)	200 KIAS (198 KCAS)
35 degrees (landing)	161 KIAS (160 KCAS)
55 degrees (ground flaps)	prohibited in flight
Maximum speed with flaps failed to 55 degrees (ground flaps) (Emergency Only)	140 KIAS (139 KCAS)
V <sub>MCA</sub> (Minimum control speed) Air	
0 degrees (takeoff)	88 KIAS (88 KCAS)
15 degrees (takeoff & approach)	81 KIAS (81 KCAS)
V <sub>MCG</sub> (Minimum control speed) Ground	89 KIAS (88 KCAS)
V <sub>LO</sub> (landing gear operating)	
Extend	250 KIAS (247 KCAS)
Retract	200 KIAS (198 KCAS)
V <sub>LE</sub> (landing gear extended)	250 KIAS (247 KCAS)
V <sub>SB</sub> (speed brakes extended)	Any speed with or without flaps
Maximum autopilot operating speed	Any normal operating speed
Maximum tire ground speed	162.4 knots

C.G. Range (Landing Gear Extended) Design C.G. Limits:

Forward Limits: Linear variation from 298.90 in. aft of datum (21.20% MAC) at 14,070 lb. to 293.30 in. aft of datum (14.50% MAC) at 9,700 lb.; 293.90 in. aft of datum (14.50% MAC) at 9,700 lb. to 9,000 lb.; linear variation from 293.90 in. aft of datum (14.50% MAC) at 9,000 lb. to 298.70 in. aft of datum (21.00% MAC) at 8,000 lb.; 298.70 in. aft of datum (21.00% MAC) at 8,000 lb. or less.

Aft Limits: 304.70 in. aft of datum (29.00% MAC) at 14,070 lb. to 13,000 lb.; linear variation from 304.70 in. aft of datum (29.00% MAC) at 13,000 lb. to 302.50 in. aft of datum (26.00% MAC) at 8,000 lb.

Landing Gear retracting moment +518.64 in-lb.

**III - Model 525B, (Commuter Category), Approved October 15, 2004, continued**

Empty Wt. C.G. Range      None

MAC      74.817 in. (L.E. of MAC at +283.01 in. aft of datum)

Maximum weights	Takeoff	13,870 lb.
	Landing	12,750 lb.
	Zero Fuel	10,510 lb.
	Ramp	14,070 lb.

Minimum Crew for all Flights (see Note 5 for cockpit equipment/arrangement restrictions):

One pilot (in the left pilot seat) plus additional equipment as specified in the  
Kinds of Operations Equipment List (KOEL) contained in the Limitations  
Section of the FAA Approved Airplane Flight Manual

OR

One pilot and one copilot

No. of Seats      Maximum ten (two crew plus eight passenger seats)

Maximum Baggage

Nose Compartment	400 lb. ( +74.00 in. aft of datum)
Aft cabin	100 lb. ( +330.20 in. aft of datum)
Tailcone	600 lb. ( +414.60 in. aft of datum)

Fuel Capacity (usable)      Total usable fuel 4,710 lb. (703 gal)  
Two wing tanks with 2355 lbs. (351 gal) usable each;  
+310.25 in. aft of datum (see NOTE 1 for unusable)

Oil Capacity (usable)      Tank mounted on each engine: 2.65 US quarts (4.09 lb.) usable each engine;  
+401.44 in. aft of datum; (see NOTE 1)

Maximum Operating Altitude 45,000 ft.

Control Surface Movements	Elevator	Up	20.5 ± 0.5 degrees
		Down	15.0 ± 1.0 degrees
	Elevator Trim Tab	Up	9.0 ± 1.0 degrees
		Down	17.0 ± 1.0 degrees
	Rudder	Right	27.0 ± 1.0 degrees
		Left	27.0 ± 1.0 degrees
	Rudder Trim Tab	Right	20.0 ± 1.0 degrees
		Left	20.0 ± 1.0 degrees
	Aileron	Up	23.5 ± 1.0 degrees
		Down	20.5 ± 1.0 degrees
	Aileron Trim Tab	Up	20.0 ± 1.0 degrees
		Down	18.0 ± 1.0 degrees
	Wing Flap	Up	0 ± 1.0 degrees
		T.O./Appr.	15 ± 1.0 degrees
		Land	35 ± 1.0 degrees
		Ground	55 ± 2.0 degrees
Speed Brakes	– Upper	Up	0 to 49.0 ± 2.0 degrees
	– Lower	Down	0 to 68.0 ± 2.0 degrees

See Airplane Maintenance Manual for rigging instructions.

**III - Model 525B, (Commuter Category), Approved October 15, 2004, continued**

Serial Nos. Eligible 525B-0001 and up

Datum 94.0 in. forward of the front face of the forward pressure bulkhead.

Leveling Means Lateral – Place 525 Leveling Tool across inboard crew seat rails at approximately FS 148. Ensure Tool is parallel to fuselage station plane and is resting solidly on seat rails. Position inclinometer on Leveling Tool with base parallel to the long axis of the Leveling Tool. Adjust the main gear jack to level aircraft.

Longitudinal – Place 525 Leveling Tool across inboard crew seat rails at approximately FS 148. Ensure Tool is parallel to fuselage station plane and is resting solidly on seat rails. Position inclinometer on Leveling Tool with base perpendicular to the long axis of the Leveling Tool. Adjust the nose gear jack to level aircraft.

**Certification Basis – Model 525B:**

- (1) Part 23 of Title 14 of the Code of Federal Regulations effective February 1, 1965, as amended by Amendments 23-1 through 23-54;
  - (a) Additions:
 

14 CFR §§ 23.773, 23.775, 23.807(e), 23.865, 23.933, 23.1309, 23.1311, 23.1419, 23.1431, 23.1441, 23.1451, and 23.1453 as amended through Amendment 23-40;

§ 23.1309 as amended through Amendment 23-49 for the engine FADEC installation only;  
 § 23.562 for emergency landing dynamic conditions for each seat/restraint system.
- (2) 14 CFR Part 34 of the Federal Aviation Regulations effective September 10, 1990, as amended by amendment 34-1 through 34-3;
- (3) 14 CFR Part 36 of the Federal Aviation Regulations effective December 1, 1969, as amended by amendment 36-1 through 36-25;
- (4) Special Conditions as follows:
  - (a) 23-ACE-55, paragraphs 2, 3, 4, and 37.
  - (b) 23-102-SC, High Altitude Operation (45,000 feet). Additional requirements for Ventilation, Air conditioning, Pressurized cabins, Oxygen equipment and supply, Supplemental oxygen, Oxygen distribution and equipment. (See NOTE 6.)
  - (c) 23-145-SC, Flight Performance, Flight Characteristics, and Operating Limitations. Special Conditions SC 23.51 Takeoff speeds; SC 23.63 Climb: General; SC 23.67 Climb: One engine inoperative; SC 23.149 Minimum control speed; SC 23.161 Trim; SC 23.173 Static longitudinal stability; SC 23.177 Static directional and lateral stability; SC 23.201 Wings level stall; SC 23.203 Turning flight and accelerated turning stalls; SC 23.251 Vibration and buffeting; SC 23.253 High speed characteristics; SC 23.1505 Airspeed limitations; SC 23.1545 Airspeed indicator; SC 23.1583 Operating limitations; and SC 23.1585 Operating procedures.

**III - Model 525B, (Commuter Category), Approved October 15, 2004, continued**

- (5) Exemption as follows:
  - (a) Exemption No. 7981 to permit certification in the Commuter category.
  - (b) Exemption No. 8323 for use of a relaxed "Dutch Roll" damping criteria above 18,000 feet in lieu of damping criteria of 14 CFR § 23.181(b).
- (6) Equivalent level of safety as follows:
  - (a) Number ACE-00-01A: 14 CFR §§ 23.1305(c)(2), (c)(5), and 23.1549(a) through (d), direct reading, digital only displays for the high-pressure turbine speed ( $N_2$ ), and fuel flow indications.
  - (b) Number ACE-99-07A: 14 CFR § 23.841(b)(6), Cabin Pressurization – High Altitude Takeoff and Landing Operations.
  - (c) Number ACE-00-05A: 14 CFR § 23.841(a), to allow small temporary cabin altitude excursions above 15,000 feet in the event of any probable pressurization system failure.
  - (d) Number ACE-02-18: 14 CFR § 23.783(f)(1), Passenger Entry Door Opening Dimensions.
  - (e) Number ACE-02-20: 14 CFR § 23.815(b), Cabin Aisle Width.
  - (f) Number ACE-03-07: 14 CFR § 23.853(d)(2) No Smoking Placard Lettering Size.
  - (g) Number ACE-04-06: 14 CFR § 23.1447(e) Passenger Oxygen Dispensing Units.
- (7) 14 CFR § 23.1311 Electronic display instrument systems not complied with. This requirement is addressed in Special Condition 23-ACE-55, Paragraph 4.

Application to amend type certificate was dated February 7, 2002. Type Certificate A1WI amended **October 15, 2004**, obtained by the manufacturer using Delegation Option 'Authorization Procedures of Part 21 of Title 14 of Code of Federal Regulations. The Model 525B is defined by Cessna Assembly Drawing Number 6300300.

**Production Basis:**

Production Certificate No. 4 issued and Delegation Option Authorization Manufacturer No. DOA-230428-CE (CE-3) authorized to issue Airworthiness Certificates under Delegation Option Authorization Procedures of Part 21 of the Federal Aviation Regulations.

**Equipment:**

The Basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the airplane for certification.

- NOTE 1. Current weight and balance information, including list of equipment included in certificated empty weight, and loading instructions are provided for each airplane in the FAA Approved Airplane Flight Manual (AFM) at the time of original certification.

The certificated empty weight and corresponding center of gravity location must include:

Unusable fuel	49.68 lb. at +296.80 in.
Full oil	15.43 lb. at +401.44 in.
Hydraulic Fluid	15.09 lb. at +318.44 in.
Anti-ice Fluid	3.40 lb. at +91.5 in.

- NOTE 2. Airplanes must be operated according to the FAA Approved Airplane Flight Manual (AFM), part number 525BFM-00 (or later approved revision). Required placards and markings are listed in Chapter Eleven (11) of Maintenance Manual, part number 525BMM00 (or later revision).

- NOTE 3. See Maintenance Manual, Chapter Four (4), "Airworthiness Limitations" for mandatory component retirement life information.

**III - Model 525B, (Commuter Category), Approved October 15, 2004, continued**

NOTE 4. All replacement seats (crew and passenger), although they may comply with TSO C39, must also be demonstrated to comply with 14 CFR §§ 23.321, 23.395, 23.561, 23.562, and 23.785.

The foam cushion buildup of all seats (crew and passenger) may not be altered. Any deviations in the foam construction or stiffness must be demonstrated by test to comply with the listed 14 CFR 23 paragraphs.

The RH side facing seat lap belt shall have a buckle which opens from right to left and the LH side facing belted toilet lap belt shall have a buckle which opens from left to right, thereby preventing the buckle's own inertia from casing it to open. Any other configuration must be verified by dynamic test.

NOTE 5. Approval for operation with a minimum crew of one pilot is based upon the cockpit equipment installation and arrangement evaluated during FAA certification testing. No significant changes may be made to the installed cockpit equipment or arrangement (EFIS, autopilot, avionics, etc.), except as permitted by the approved MMEL, without prior concurrence from the responsible Aircraft Certification Office.

NOTE 6. Model 525B airplanes have been approved for high altitude operations (altitudes above 41,000 feet), by Special Conditions. Any modifications to the pressure vessel must be approved in accordance with the requirements as shown in the certification basis. This includes modifications which could result in a pressure vessel opening, either through crack-growth or antenna loss, greater than 3.00 sq. in.

NOTE 7. Airplane Serial Numbers identified below meet the airworthiness requirements for operation in Reduced Vertical Separation Minimum (RVSM) airspace.

S/N 525B-0001 and On	All airplanes are equipped with Collins Pro Line 21 dual Air Data Computers and pilot's and copilot's Primary Flight Displays as standard equipment.
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Each operator must obtain RVSM operating approval directly from the FAA.

NOTE 8. The Model 525B is approved for One Engine Inoperative 10 minutes thrust capability with the Williams International FJ44-3A engine, per FAA Policy Memo "Guidance of Engine Operation at Takeoff Thrust/Power for Ten-Minutes in a One-Engine Inoperative Situation for Cessna Model 525B Airplane (Project AT3268WI-A)", dated April 14, 2004, from Standards Office Small Airplane Directorate and Standards Office, Engine and Propeller Directorate.

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